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10/578,179	02/20/2007	Thomas Urban	290718US6PCT	5204
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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
LE, HOANGANH T				
ART UNIT		PAPER NUMBER		
2821				
NOTIFICATION DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/578,179

Applicant(s)

URBAN ET AL

Examiner

HoangAnh T. Le

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 1 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/CD)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. The amendment filed on April 23, 2010 is acknowledged.
2. A complete reply to the final rejection must include cancellation of the withdrawn claim 1.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, "the dipole is disposed on an outside of the coating or layer" of claims 13 "the dipoles is mounted on one of the free main surfaces of the glazing" of claim 16, "the shifted bases and the diamond shape" of claims 22 and 39, "the conducting tracks and the dipoles are disposed on the substrate" of claims 24 and 41; and "the dipoles is mounted on one of the free main surfaces of the glazing" of claim 34 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for

consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 24 and 41 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In claims 24 and 41, the limitation "the conducting tracks and the dipoles are disposed on the substrate" finds no support in the specification.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 2-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites "the conducting tracks between the strip line have different widths". From the claim, it is not clear the conducting tracks between the strip line and what?

Claim 6 recites "a conducting tracks acting as a shielding line is disposed above the first conducting track and below the second conducting track". From the claim, it is not clear how one conducting track can be disposed above the first conducting track and below the second conducting track"? It appears that figures 3 and 6 show two shielding lines 8,80,9,90.

Claim 28 recites "the conducting tracks between the strip line have different widths". From the claim, it is not clear the conducting tracks between the strip line and what?

In claims 10 and 12, what are meant by "applied to a first surface of the substrate" and "applied to a second surface of the substrate"? It appears that the first and second conducting tracks are in the substrate (figures 2-3).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 7,8,10,21,22, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shoemaker (the US Patent No. 5,363,114) in view of Nestic et al (the US Patent No. 6,339,406, of record).

Regarding claim10, the Shoemaker teaches in figures 1-4 a glazing, comprising: a substantially transparent monolithic pane; and an antenna arrangement that transmits and receives electromagnetic signals and is disposed on the glazing. Shoemaker does not teach the antenna arrangement comprising: a first conducting track applied to a first surface of the carrier substrate, the first conducting track including at one end a point of contact to gather or inject the signals and a first dipole at an opposite end; and a second conducting track applied to a second surface of the carrier substrate opposite from the first surface, the second conducting track including at one end a point of contact to gather or inject the signals and a second dipole at an opposite end, wherein the first and the second dipoles form crossed dipoles.

The Nestic et al reference teaches in figure 7 an antenna arrangement for transmitting and receiving electromagnetic signals, the antenna arrangement comprising: a flat carrier substrate 11 made of dielectric material, a first conducting track 26 applied to a surface of the carrier substrate, the first conducting track possessing at one end a point of contact so as to gather thereat or inject thereat the signals and a first dipole 21,22 at the opposite end, a second conducting track 28 applied to the other surface of the carrier substrate, the second conducting track possessing at one end a point of contact so as to gather thereat or inject thereat the signals and a second dipole

23,24 at the opposite end, the first and the second dipoles forming a crossed dipole in order to improve the gain of the antenna (col. 3, lines 18-21).

Since one of ordinary skill in the art would recognize the benefit of improving the gain of the antenna, it would have been obvious to provide Shoemaker with the antenna arrangement comprising: a first conducting track applied to a first surface of the carrier substrate, the first conducting track including at one end a point of contact to gather or inject the signals and a first dipole at an opposite end; and a second conducting track applied to a second surface of the carrier substrate opposite from the first surface, the second conducting track including at one end a point of contact to gather or inject the signals and a second dipole at an opposite end, wherein the first and the second dipoles form crossed dipoles as taught by Nesic et al.

Regarding claim 7, the conducting tracks are made of copper (col. 3, lines 65-68, of Shoemaker).

Regarding claim 8, the carrier substrate C is a flexible film (col. 2, lines 42-43, of Shoemaker).

Regarding claim 21, the first and the second dipoles are perpendicular to one another (figure 7 of Nesic et al).

Regarding claim 22, the first and second dipoles include shifted bases and form a diamond shape (figure 7 of Nesic et al).

Regarding claim 25, the substrate includes a plurality films or panes disposed one above another (figure 5 of Nesic et al).

10. Claims 6-15,18-25, and 30-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Veerasamy (the US 2003/0034926) in view of Nestic et al (the US Patent No. 6,339,406, of record).

Regarding claims 6-15,18-25, and 30-44, the Veerasamy reference teaches in figures 1-2 a glazing, comprising: a substantially transparent multilayer pane 5,7; and an antenna arrangement 3 that transmits and receives electromagnetic signals and is disposed on the glazing. The glazing includes a coating 15 or a layer that reflects electromagnetic waves, and a portion of the antenna arrangement is disposed further towards the on an outside of the said reflecting coating or layer (figure 2). The glazing is a substantially transparent multilayer pane and at least a part of the antenna arrangement is disposed between two layers of the glazing (figure 2). The glazing is a substantially transparent multilayer pane, including a coating 15 or a layer reflecting electromagnetic waves and a portion of the antenna arrangement is disposed between the coating or the reflecting layer and an internal face of an outermost layer of the glazing (figure 2). Veerasamy does not teach the antenna arrangement comprising: a first conducting track applied to a first surface of the carrier substrate, the first conducting track including at one end a point of contact to gather or inject the signals and a first dipole at an opposite end; and a second conducting track applied to a second surface of the carrier substrate opposite from the first surface, the second conducting track including at one end a point of contact to gather or inject the signals and a second dipole at an opposite end, wherein the first and the second dipoles form crossed dipoles.

The Nesic et al reference teaches in figure 7 an antenna arrangement for transmitting and receiving electromagnetic signals, the antenna arrangement comprising: a flat carrier substrate 11 made of dielectric material, a first conducting track 26 applied to a surface of the carrier substrate, the first conducting track possessing at one end a point of contact so as to gather thereat or inject thereat the signals and a first dipole 21,22 at the opposite end, a second conducting track 28 applied to the other surface of the carrier substrate, the second conducting track possessing at one end a point of contact so as to gather thereat or inject thereat the signals and a second dipole 23,24 at the opposite end, the first and the second dipoles forming a crossed dipole in order to improve the gain of the antenna (col. 3, lines 18-21).

Since one of ordinary skill in the art would recognize the benefit of improving the gain of the antenna, it would have been obvious to provide Veerasamy with the antenna arrangement comprising: a first conducting track applied to a first surface of the carrier substrate, the first conducting track including at one end a point of contact to gather or inject the signals and a first dipole at an opposite end; and a second conducting track applied to a second surface of the carrier substrate opposite from the first surface, the second conducting track including at one end a point of contact to gather or inject the signals and a second dipole at an opposite end, wherein the first and the second dipoles form crossed dipoles as taught by Nesic et al.

11. Claims 2-5, and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Veerasamy in view of Nesic et al as applied to claims 6-15, 18-25 and 30-44 above, and further in view of Maoz (the US Patent No. 5,068,670).

Regarding claims 2-5 and 26-29, Veerasamy and Nesic et al teach every feature of the claimed invention, excluding a quarter wavelength transformer and the transformer being in form of a strip line.

The Maoz reference teaches in figure 14 the use of a quarter wavelength transformer and the transformer being in form of a strip line in order to produce a broadband dual matching network (col. 8, lines 66-68).

Since one of ordinary skill in the art would recognize the benefit of producing a broadband dual matching network, it would have been obvious to provide Veerasamy/Nesic et al with a quarter wavelength transformer and the transformer being in form of a strip line as taught by Maoz.

Allowable Subject Matter

12. Claims 16-17 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

13. Applicant's arguments with respect to claims 2-15 and 18-44 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HoangAnh T. Le whose telephone number is (571) 272-1823. The examiner can normally be reached on 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Owens can be reached on (571) 272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

16. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/HoangAnh T Le/
Primary Examiner, Art Unit 2821